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THE PLANT DISEASE BULLETIN

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Reports on corn diseases are featured in this issue of the Bulletin.

Fabraea maculata is severe on pears in Illinois this year, according to Anderson. (Page 126).

CEREAL AND FORAGE CROPS

CORN

The following statement concerning the condition of the corn crop has been given out by the Bureau of Markets and Crop Estimates in the Crop Notes for the week ending October 1:

"The corn crop in most of the country is fully matured and harvesting has made good progress. Good yields of high quality are reported in most sections. Husking has commenced and will soon become general;

cribbing has already begun in some sections. Danger of damage from frost is now nearly negligible. Some damage from ear worms and also from molding in the shock, due to rain, is reported in Illinois, Indiana, and Iowa. The yield of the late crop in the southeastern section is being cut somewhat by drouth and the grain is not filling satisfactorily."

Smut caused by Ustilago zeae.

Further reports on the corn smut situation have been received as follows. The observations of H. L. Bolley of North Dakota are of particular interest.

Vermont: A little less than average but not as much less as would be expected from the very dry year. (Hutman, October 1).

Delaware: Very prevalent with field corn. Infection of leaves at nodes more common than tassel or ear infection. Infection in many fields ranges from 2-5%. (Adams, October 1).

West Virginia: Reported as severe in some fields, but I do not think that it caused as much loss as in 1920. (Giddings, October 1).

Alabama: Small amount. (Povah, October 1).

Mississippi: Appears to be more severe this season than usual. Very abundant on Station farm and other parts of state visited. (Neal, October 1).

Arkansas: Rather common, less than 1% injury. (Elliott, October 1).

Ohio: The greater number of early infections seemed to be of the leaf and leaf sheath type, followed later by node and tassel infections. In certain fields investigated 5-10% of the buckling of stalks was due to node infections by this organism. Losses are estimated to be about 1-2%. (Thomas, October 1).

Illinois: About 5-5% of plants infected; loss in yield estimated at 2%. (Dungan, October 1).

Michigan: Common this year; many farmers state worst in years. Relation to rotation evident in college breeding plats, where one or two cases of 90% infestation were found. Edibility, "a la Stevens" tested with excellent mycophagic results. (Coons, October 1).

Wisconsin: More than for several years, especially called to our attention from Pierce and St. Croix Counties. (Vaughan, October 1).

North Dakota: Corn smut has been quite common in certain fields. This disease will apparently become quite difficult to control unless more effort is made. Large percentage of stalks in some fields are affected. Since the country is new to corn only two conclusions can be drawn. Either the spores are carried long distances by the wind or the crop is infected by the planting of infected seed. The latter question needs close study. While it is evident that this disease can be increased by the applying of manure and refuse from diseased stalks, it is not at all common in North Dakota to apply manure to corn fields so that the heavy infection which sometimes occurs in widely infected fields cannot be explained in that manner. (Bolley, October 1).

Washington: Small amount noted at Pullman and in Yakima Valley; this smut is common but not serious. (Dana, October 1).

Head smut caused by Sorosporium reilianum.

Washington: While in Yakima I found another corn field that was diseased with

head smut. From my observations this smut is in a number of corn fields near Outlook which is in the lower Yakima Valley. (Zundel, September 17).

Root, stalk, and ear rots caused by Gibberella saubinetii, Fusarium sp., etc.

Collaborators report as follows concerning the root and ear rot situation this year:

Vermont: Not observed. Believe that the season has been too dry as yet. (Lutman, October 1).

Delaware: Generally distributed throughout the state and will probably reduce the yield 10-15%. Prematuring as the result of infection on demonstration plots ranges from 5-30%. In two fields barren stalks on the basis of one hundred hills ranged from 11-28%. A general condition of systemic infection was found in one field where the nodes showed infection from base to tassel. The nodes were stringy as the result of infection with many stalks broken down and fallen over. The serious prevalence of corn ear worm this season has resulted in the increase of kernel rot and moldy ears. In most every instance of ear work injury the ear rot fungi are found established. Observations so far show that Fusarium moniliforme, Cephalosporium sacchari and Diplodia zeae are commonly associated with the feeding of ear worm. The excessive moldy condition of ears this season may be charged to the ear worm as the result of its infestation. In many instances at least 10-15% of the weight of grain of infested ears is destroyed. (Adams, October 1).

West Virginia: Quite general throughout the state and reported as causing considerable loss in some of the southeastern counties. (Giddings, October 1).

Mississippi: Root and ear rots caused by Fusarium spp. are common again in many sections of the state. As high as 10% infection is commonly observed. No estimates as to amount of damage. (Neal, October 1).

Arkansas: Not so severe as usual. Worm eaten ears generally attacked. (Elliott, October 1).

Ohio: This disease is recognized to be generally prevalent throughout Ohio, occasioning greater concern each year. Losses for the current year have been especially serious in southwestern Ohio, particularly where crib selection of seed corn is practiced. There is no question but that certain species of Fusaria are responsible for greater losses in Ohio than any other classes of organisms, as demonstrated by extensive cultural investigations. (Thomas, October 1).

Illinois: Reduction in yield is fully 10%; latter part of season has been favorable for corn rots. (Dungan, October 1).

Michigan: No loss reported. (Coons, October 1).

Wisconsin: Seedling infection fairly abundant during the spring. Prevalent as an ear rot late in season especially on late planted corn. (Vaughan, October 1).

North Dakota: North Dakota lands are comparatively new to corn and on account of the attempt of the growers to hasten maturity to save seed to escape frost, special selection of corn has been pretty generally practiced with the result that ears are better selected and dried than is usual in general corn districts, and it is probable that infected ears have not been commonly saved although the growers did not know the danger of planting infected corn. As yet rot is not abundant although it is not uncommon. Dry weather conditions in the fall also probably aid in keeping the seed free. (Bolley, October 1).

Brown spot caused by Physoderma zeae-maydis.

Physoderma appeared on corn in experimental plots at the United States Department of Agriculture Experimental Farm at Arlington, Virginia this year. The disease seems to be especially abundant in Ohio this year, according to the report given below.

South Carolina: Present. Extent of injury unknown but evidently not excessive. (Ludwig, October 1).
Alabama: Disease plentiful but apparently little damage, probably owing to dry weather. (Povah, October 1).
Mississippi: Present in about the same amount. Damage negligible for the entire state. (Neal, October 1).
Arkansas: Common in every field, but not very severe. (Elliott, October 1).
Ohio: The brown spot disease has been observed in every corn field investigated throughout the state. Except in certain sections which suffered seriously from drought during the midsummer period, losses have been slight, averaging less than .5%. (Thomas, October 1).
Illinois: About 5% of plants show trace of infection, but loss is probably slight. (Dungan, October 1).

Rust caused by Puccinia sorghi.

A slight amount of corn rust has become evident as shown by the following reports:

West Virginia: Quite general but apparently causing little damage. (Giddings, October 1).
South Carolina: Present. Damage probably not great. (Ludwig, October 1).
Alabama: Very slight infection seen. (Povah, October 1).
Arkansas: Much less than usual. (Elliott, October 1).
Illinois: Trace. (Dungan, October 1).

Bacterial wilt caused by Aplanobacter stewartii.

That bacterial wilt is rare is evident from the following reports, most of which are negative.

Vermont: Not observed. We are out of the northern range. (Lutman, October 1).
West Virginia: Not reported. (Giddings, October 1).
Alabama: Not seen. (Povah, October 1).
Mississippi: Not present in the state. (Neal, October 1).
Arkansas: Reported from only one locality. (Fort Smith, 1920). (Elliott, October 1
Ohio: Not observed this season. (Thomas, October 1).
Illinois: Trace. (Dungan, October 1).
Michigan: Not seen. (Coons, October 1).
Wisconsin: No cases seen or reported. (Vaughan, October 1).
North Dakota: The new lands of North Dakota have not had opportunity to be largely infected by any of the root and seed diseases, and the possible result is bacterial disease is not often observed. (Bolley, October 1).
Washington: No reports. (Dana, October 1).

FLAX

Wilt caused by Fusarium lini.

Wilt has been reported as occurring rather generally in Minnesota and North Dakota. Reports have also been received from Wisconsin and South Dakota.

Minnesota: First reported May 5, in Ramsey County. Reports vary from trace to 5% throughout the state. (Department of Plant Pathology, September 15).

North Dakota: The wilt diseases as usual have been rather evenly distributed, particularly in the eastern half of the state on the old lands and have done damage in direct ratio to the plantings made on old lands. Seed was of unusually good quality the past year. Most areas of wilt destruction were found upon lands already infected. Control has been quite evident on all those fields where proper wilt resistant stuff has been planted. (Bolley, October 1).

Rust caused by Melampsora lini.

North Dakota: Some fields, even of the strong wilt resistant flax, have suffered badly from rust. This disease, as in the case of wilt, is a result of planting too constantly on the same land, and like rust in other crops, depends largely for its destructive nature on the condition of the weather and the maturity of the crop. (Bolley, October 1).

FRUITS

The following reports concerning diseases of pear and of grape have been received from Illinois. The Fabraea leaf spot of pear and black rot of grape have apparently been quite important in that state this year.

PEAR

Blight caused by Bacillus amylovorus. - Not especially serious on pears this year. Some late blight developed on large limbs. (Anderson, September 15).

Fabraea leaf spot caused by Fabraea maculata. - Worst epiphytotic ever experienced on mature trees. Especially bad in Marion County and Union County where most of the pears of the state are grown. Also severe in nursery on French seedling stock. In one nursery French seedlings completely defoliated while Kieffer seedlings showed no injury. Serious on Kieffer in orchards, however. No spraying done this season since no crop was expected. (Anderson, September 15).

Leaf spot caused by Mycosphaerella sentina.- Not of any importance this year. Fabraea spot caused all the trouble. (Anderson, September 15).

GRAPE

Black rot caused by Guignardia bidwellii. - Unusually serious this year on unsprayed vines. In some localities caused almost total loss of crop. Well sprayed vineyards did not suffer. (Anderson, September 15).

Downy mildew caused by Plasmopara viticola. More than the usual amount of downy mildew occurred on the vines this season. Also some injury of the fruit. Most of blight appeared late in season. August and September very wet. (Anderson, September 15).

Surface mildew caused by Uncinula necator. - More than usual on all vineyards observed but developed late in season causing little injury. (Anderson, September 15).

VEGETABLE AND FIELD CROPS.

PEANUT

Leaf spot caused by Cercospora personata.

South Carolina: Rather severe in the vicinity of Clemson College but does not seem to have decreased the crop very much. No complaints from other localities, although it is doubtless present. (Ludwig, October 1).

Alabama: Abundant. Damage questionable. (Povah, October 1).

Arkansas: Fairly common, probably causing some reduction of yield. (Elliott, October 1).

Tip burn (possibly caused by leaf hoppers).

South Carolina: A burning of the leaves, originating as a triangular yellowed area in the outer half of the leaflet, occurred earlier in the season. It was associated with an attack of leaf hoppers and possibly was caused by them. The trouble was referred to the Entomology Division of the Experiment Station here, and they are of the opinion that the leaf hoppers caused the trouble. (Ludwig, October 1).

Southern Sclerotial blight caused by Sclerotium rolfsii.

Alabama: Slight amount of infection. (Povah, October 1).

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